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Value, Rent, and the Political Economy of Social Media

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Fuchs (2010, 2012) argues that users of social media produce value and surplus value in the Marxian sense. Arvidsson and Colleoni (2012) critique this hypothesis, claiming that Marx's theory of value is irrelevant to the regime of value production on social media platforms in particular and in informational capitalism in general. They claim that the affective relations and financial speculations that generate value on social media are not dependent on labor time. This article critically engages Fuchs, and Arvidsson and Colleoni, by revisiting Marx's theory of value. Contra Fuchs, we argue that audiences do not produce value and surplus value—neither for social nor for mass media. Contra Arvidsson and Colleoni, we argue that so-called affective relations (*philia*) do not produce value either. Instead we demonstrate that social media generate revenue from four primary sources—by leasing advertisement space to generate advertisement rent, by selling information, by selling services to advertisers, and by generating profits from fictitious capital and speculative windfalls. All four, we argue, can be adequately explained by Marx's theory of value.

Keywords advertising, fictitious capital, Marx, mass media, rent, social media, speculation, stock exchange, value

In this article we critique the argument that users of social media can be understood in the Marxist sense to be laboring to produce value for social media. Instead we argue that the expansion of social media needs to be understood in line with the expansion of rentier capitalism in general. We thus attempt to demonstrate the utility of analyzing the political economy of social media

through Marx's conceptions of rent and "fictitious capital."

Our point of entry is a recent, and very lively, debate between Fuchs (2010; 2012) and Arvidsson and Colleoni (2012, hereafter Arvidsson and Colleoni). The first section of this article summarizes this exchange within the context of the "audience commodity" debate, which was initiated by Dallas Smythe in 1977. In the section that follows we summarize Marx's theory of the general form of surplus value at the point of production and its particular manifestations in the realm of distribution. This summary is necessary because the source of both Fuchs's and Arvidsson and Colleoni's mistakes, we believe, is their confusion of the general form with its particular manifestations. In the third section we critique Fuchs's claim that "prosumers" produce value and surplus value in two steps. First, we deal with media revenues from advertisements. We show that the claim that audiences or "prosumers" produce value and surplus value is mistaken for both mass media and social media. We argue that the price of an ad is a rent paid for advertising space/time, the magnitude of which primarily depends on the sociocultural profile of the audience. Second, in regard to social media, we show that the exchange value of the data that is provided by prosumers tends toward zero. Therefore, we argue that any price applied to such data is best understood as a rent extracted through various mechanisms of monopoly.

Finally, we critique Arvidsson and Colleoni in two subsections. First, dealing with Arvidsson's (2006; 2009) concept of brand value, we argue that the claim that affective relations produce the value of brands and advertisements is mistaken. We show that the so-called added value of the brand is a combination of extra profit, monopoly rent and speculative windfalls. Using Marx's distinction between value and price we argue that

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affective relations, though critical for branding and advertising, do not produce new value but instead transfer value from some commodities to others. Second, we reject Arvidsson and Colleoni's claim that Marx's theory of value is irrelevant since the so-called market value of social media companies depends on financial operations. Discussing stock exchange, fictitious capital, and speculation, we instead demonstrate that although the largest portion of incomes generated in the stock exchange does not originate from surplus value, the production and realization of surplus value are the *raison d'être* of financial operations.

First, however, in order to contextualize the debate between Fuchs and Arvidsson and Colleoni, we want to briefly discuss the contemporary return of Dallas Smythe's argument that the media produces an "audience commodity."

THE AUDIENCE COMMODITY DEBATE

In 1977 Dallas Smythe argued that the mass media produce an audience commodity that is sold to advertisers. The viewing/reading of ads, according to Smythe, both reproduces the labor power of the viewer/reader, and simultaneously contributes to the production of the audience as a commodity.

Smythe's "audience commodity" thesis stimulated much response and critical engagement at the time and over the years that followed (see Murdock 1978; Livant 1979; Meehan 1984; 1993; Jhally and Livant 1986/2006; Lebowitz 1986). While discussion had clearly cooled off by the 1990s, recent years have seen the return of Smythe and the debate he initiated (see Andrejevic 2002; 2004; 2007; Cohen 2008; Whyte 2010; Kang and McAllister 2011; Caraway 2011; Lee 2011; Fuchs 2012b). The shift from "mass" to "social" media has been the impetus for this return. Smythe's argument appears to be even more suggestive today with "Web 2.0" and the rise of what can be called the "prosumer commodity" (Fuchs 2010; Manzerolle 2010), as "prosumers," along with producing content and viewing ads, produce data that can be sold to marketers.

It is within this context that the recent debate between Christian Fuchs (2010; 2012) and Arvidsson and Colleoni (2012) must be situated. The debate was initiated by Fuchs's article "Labor in Information Capitalism and on the Internet" (2010). This piece provoked a critique by Arvidsson and Colleoni entitled "Value in Information Capitalism and on the Internet" (2012), which Fuchs (2012) responded to in a rejoinder.

A central question of contention throughout the debate has been: What is the form and origin of the revenues media generate from advertisements? Smythe, to our

knowledge, did not clearly answer, nor even ask, this question. Instead, Jhally and Livant (1986/2006), building on Smythe, engage this question directly in regard to television advertising. However, they offer two contradictory answers. First, they argue that from the point of view of advertisers, media revenues from ads are a rent advertisers must pay to gain access to media space/time (Jhally and Livant 1986/2006, 125). Jhally and Livant then, however, proceed to argue that media actually produce the audience commodity that is sold to advertisers. The value of this audience commodity is produced by the watching labor of the viewer. Jhally and Livant divide watching time into necessary watching time and surplus watching time: an intriguing, though misleading, analogy to Marx, who divided the working day into necessary time, in which the worker worked to produce the equivalent of the value of his or her labor power, and surplus time, during which the worker worked to produce surplus value. For Jhally and Livant, necessary watching time is when viewers watch the programs they enjoy, while surplus watching time occurs during the watching of ads. Watching ads thus produces the surplus value that is metamorphosed into the profit earned by media capitalists. Therefore, in the same breath Jhally and Livant depict media advertising revenues as generated both from rent paid by advertisers and from surplus value produced by viewers. Obviously, these revenues cannot be both.¹

Today, with the emergence of interactive and social media, Fuchs (2010; 2012) argues that Internet users produce value and surplus value in two ways. First, they produce "informational content" that is sold as a commodity by media to advertisers. Second, they constitute an audience for advertisements, and by paying attention to ads, they also produce value and surplus value. It seems that Fuchs bases his second argument on Jhally and Livant's thesis. Like them, he argues that Marx's law of value can be applied to media revenues—that labor time is the measure of the value created in social media—just like it is the measure of value in broadcast media. "The more time a user spends on Facebook the more data is generated about him/her that is offered as a commodity to advertising clients" (Fuchs 2012, 639).

In their recent critique of Fuchs, Arvidsson and Colleoni (2012) claim that social media revenues are impossible to understand via Marx's theory of value. Rather than labor time, value on social media is increasingly connected to the affective quality of social connections—the so-called *philia*—that companies attempt to create between their consumers and with their products. To further their argument against the relevancy of the labor theory of value, Arvidsson and Colleoni also point to the importance that finance capital plays in generating revenue for social media.

In order to counter these mistaken positions, it is necessary to begin our critique by briefly summarizing the most relevant aspects of Marx's theory of surplus value and the transformation of surplus value into profit, interest, and rent.

THE PRODUCTION AND DISTRIBUTION OF SURPLUS VALUE: A BRIEF SUMMARY OF MARX'S THEORY

According to Marx, a commodity has two aspects: use value, which satisfies particular human needs, and value, which is expressed in the exchange value, the price of the commodity. The magnitude of value is determined by the amount of abstract social labor-time necessary for the production of the commodity. If commodity A is produced by n different producers, who respectively spend T_1, T_2, \dots and T_n times on its production, then the value of $A = T_1 + T_2 + T_3 \dots + T_n \div n$. (Marx 1976, 125–138).

While the use value of a commodity is a function of its physical properties, the value of a commodity can only be expressed and measured relationally through a separate object that stands in opposition to it. Money is the universal form of exchange value, but in expressing its value in money the commodity purges itself of all traces of the labor that went into creating it. This presents the illusion that exchange itself is the origin of value (Marx 1976: 163–177). It appears that the capitalist makes his or her money by “buying cheap and selling dear.” Although this might be true—and is true—of individual capitalists, it is a zero-sum game if all capitalists are considered together. This is because each capitalist is simultaneously a buyer and a seller. Hence, exchange cannot be the source of the aggregate surplus value. Instead, the source of surplus value lies in the process of production (Marx 1976, chapter 5).

The capitalist buys means of production and employs workers to produce commodities, the exchange value of which is higher than that of the invested capital. However, means of production, Marx argues, are not the source of surplus value either. Instead, the origin of the added value is labor. Labor produces more value in the process of production than the value it receives in the form of wage payments.² However, Marx qualifies this argument. Not all wage labor, but only wage labor that produces commodities produces surplus value. In order to count as a commodity, not only must a good or service be produced by human labor but it must also be offered as a product for general sale on the market.³

Those capitalists who extract surplus value must necessarily share it with other groups, namely, merchants, bankers, owners of land and advertising space, and the

state. This is because while these groups do not contribute directly to the production of surplus value, they are vital for its realization and reproduction. The merchant sells the commodities, the banker lends money to productive capitalists, the landowner supplies the land, advertising accelerates the sale of commodities, and the state takes care of the external necessary conditions for the reproduction of capital. The distribution of surplus value among these groups does not take place directly at the point of production but indirectly through mechanisms of market, finance, and taxes. Therefore, the portions of surplus value appropriated by these groups appear in transformed and mystified forms: profit for industrial and commercial capitalists, interest for money lenders, rent for the owners of real and virtual space, and taxes for the state. All these categories, with the exception of taxation, belong to the realm of the market and their magnitudes are influenced by the interplay between supply and demand. Therefore, the surplus value transformed into each of these forms appears as originating from exchange and not from production. Profit appears as the fruit of capital, interest of money, and rent of space. In other words, capital, money, and space appear to have inherent value and the capacity to generate new value (Marx 1991).

The mainstream economist takes these mystified forms at face value. Marx's dialectical method, on the other hand, is comprised of two stages. First, it abstracts from surface phenomena in the realm of the market (profit, interest, rent, etc.) and delves into the depths of production (Marx 1993, 100–108). There it discovers the laws of value and surplus value (Marx 1976). Second, on the basis of this discovery, it returns to these surface phenomena and integrates them into a whole, showing that profit, interest, and rent are in fact manifestations of surplus value (Marx 1991).

Before moving on to critique Fuchs's position, it is crucial to clarify the difference between value and price, as this difference comes up several times in our discussion. The relation between labor-time (value) and money (price) is that of essence and appearance. In the capitalist economy commodities are sold not at their values but at their prices. While there exists a general correspondence between value and price, the law of supply and demand ensures that some commodities are sold above their value (higher prices) while others are sold below their value (lower prices). Those commodities with higher effective demand absorb into themselves portions of the value of commodities with lower effective demand. This means that sellers of the first type make extra profit at the expense of sellers of the second type.

Furthermore, certain objects can have prices without being the product of social labor (a painting, for example) or they may not be the product of labor at all (virgin

land, shares in the stock market). In a Marxian sense we could say that these objects have a price but no value.⁴ The origin of this price is the monopoly right of the owner over the object. This is a crucial point to remember for our discussion of rent and fictitious capital later on.

ADVERTISING AND THE EXTRACTION OF RENT: FUCHS' FIRST MISTAKE

As we have already mentioned, Fuchs (2010; 2012) follows Jhally and Livant (1986) in arguing that the online audience produces value and surplus value, the magnitude of which is determined by their watching time. In this section we critique this thesis by employing Marx's theory of value. We show that the attention that audiences pay to ads does not produce value and surplus value, either for mass media or for social media.

Mass Media and Advertising Revenues

In what follows we use CPT to evaluate whether mass media audiences produce value. Cost per thousand (CPT), or cost per mille (CPM), is of course the advertisement industry's benchmark to calculate the relative costs of an advertising campaign. It is the price that the advertiser pays to reach one thousand audience members through a certain medium. Analyzing CPT/CPM for various media we show that audiences do not produce value and surplus value.

For the sake of argument let's follow Smythe and Jhally and Livant and say that the audience, by watching or reading advertisements, performs abstract social labor that produces value. In this case, CPT represents (in price-form) the value that one thousand readers of an advertisement in a given newspaper, or one thousand viewers of a commercial on a given television network, produce through performing abstract labor.

It is surely beyond dispute that the reading of any one-page ad in any newspaper takes roughly the same amount of time and requires the same amount of energy. The same would seem to be true for watching a 30-second television commercial, or reading/watching the same ad on different Internet sites. In Marxist terms then, such reading or watching requires the same amount of abstract social labor. From this it follows that if we want to claim that the audience "labors," then one thousand readers of any newspaper ad, one thousand viewers of any television commercial, or one thousand visitors to a particular ad on any website, should produce the same (audience) commodity of the same value regardless of the ad, or the newspaper, TV network, or Internet site where it appears. The reason is that one thousand readers/viewers/visitors

TABLE 1
CPT for B/W ads in select U.S. newspapers

Newspapers	CPT
<i>Wall Street Journal</i>	\$44.5
<i>The New York Times</i>	\$33.2
<i>USA Today</i>	\$25.7
<i>Los Angeles Times</i>	\$66.4
<i>The Indianapolis Star</i>	\$90.0
<i>Kansas City Star</i>	\$143.9
<i>The Stockton Record</i>	\$393.4
<i>San Jose Mercury News</i>	\$202.7
<i>Belleville News Democrat</i>	\$45.7

Note. Figures can be found on pages 189, 191, and 194 of Austin, Barnard, Galli, and Hutcheon (2011).

would use the same amount of abstract labor (energy) to pay attention to any one ad. Therefore, CPT/CPM—which is the price expression of value—must remain approximately the same, and not display any large variations between newspapers, TV networks, or websites.⁵ In other words, CPT should not be affected by the demographics or sociocultural background of the audience.

Clearly though this is not the case. We ask the reader to refer to Table 1, which shows the CPTs for a range of newspapers in the United States. While the average CPT for all newspapers in the United State is \$71.4, CPT varies radically between different newspapers. For instance CPTs for the *Wall Street Journal*, *The New York Times*, *USA Today*, *The Kansas City Star*, and *The Stockton Record* are respectively \$44.50, \$33.20, \$25.70, \$143.90, and \$393.40. Thus, the cost of advertising per one thousand audience members in *The Stockton Record* is 15.3 times higher than in *USA Today*.

We can see similar variations if we compare the CPTs of television networks. Table 2 shows the 30-second peak adult CPTs for major U.S. television networks. While the average CPT for all commercial channels is \$19.50, Fox has the highest CPT of \$28.10, while CBS has the lowest (\$14.50).

TABLE 2
CPT for U.S. television networks (30 second, peak adult)

Networks	CPT
ABC	\$19.8
CBS	\$14.5
CW	\$27.5
Fox	\$28.1
NBC	\$15.8

Note. Figures can be found on page 185 of Austin et al. (2011).

TABLE 3

CPMs for different types of Internet sites in the United States

Sites	CPM
Social networking	\$0.56
Portals	\$2.60
Entertainment	\$4.75
Community	\$2.10
Sports	\$6.29
Newspapers	\$6.99
Online gaming	\$2.68
Photos	\$1.08

Note. Figures can be found on page 209 of Austin et al. (2011).

Table 3 shows average CPMs for different types of sites on the net. Again we can observe significant variations. Online newspapers have the highest CPM (US\$6.99), which is 12.48 times higher than the average CPM of \$0.56 for social networking sites.

Tables 4 and 5 show respectively the lowest, the average, and the highest CPTs for newspapers and television in different countries across the Americas. Upon first glance at these tables what becomes immediately clear is the variation between CPTs, both within the same country and between different countries in the Americas. For example, the data show that the average CPT for newspapers in the United States and Brazil is respectively \$71.40 and \$153.19, and the average CPT for television in the United States and Argentina is respectively \$19.50 and \$69.70.

What are we to make of such dramatic variations in CPTs/CPMs? If audiences produce value, then why would one thousand readers of *The Stockton Record* produce 15.3 times more value than the same number of *USA Today* readers? Or why should the same number of

TABLE 4

CPT for B/W newspaper ads across the Americas

Country	Lowest	Average	Highest
Argentina	\$12.90	\$15.50	\$23.10
Brazil	\$15.33	\$153.19	\$953.62
Canada	\$12.08	\$77.96	\$182.22
Colombia	\$8.30	\$36.95	\$264.70
Ecuador	\$7.90	\$25.20	\$48.90
Peru	\$5.00	\$26.30	\$150.00
Puerto Rico	\$16.70	\$30.10	\$42.30
United States	\$24.10	\$71.40	\$385.80

Note. Figures compiled from data on page 19, 32, 51, 52, 71, 102, 149, 167, 192, 193, and 195, respectively, of Austin et al. (2011).

TABLE 5

CPT for 30-second peak television ads across the Americas

Country	Lowest	Average	Highest
Argentina	\$43.80	\$69.70	\$85.70
Canada	\$4.82	\$15.22	\$33.80
Ecuador	\$13.80	\$16.20	\$20.90
Mexico	\$11.61	\$39.04	\$48.54
Peru	\$1.60	\$4.90	\$8.90
Puerto Rico	\$10.00	\$14.10	\$15.40
United States	\$14.50	\$19.50	\$28.10

Note. Figures compiled from data on page 5 and 17, 5 and 49, 5 and 100, 215, 147, 164, and 185, respectively, of Austin et al. (2011).

visitors to newspaper sites on the Internet produce 12.48 times higher value than do “prosumers” on social networking sites?

The only explanation is that CPT does not represent the transformation of audience-produced value into price. Audiences are not engaged in value-producing labor when they read, watch, or hear an ad. How could it be otherwise, since the abstract labor (energy) to pay attention to any one-page ad, any 30-second commercial, or any online banner ad, by one thousand readers/viewers, is equivalent?

It would seem instead that the major portion of CPT/CPM is rather a rent that media owners extract from advertisers (although CPT may also include the cost of the production of the advertisement).⁶ The money paid by advertisers to media is perhaps best understood as an exchange of rent for hope: the potential of generating greater future sales.⁷ Instead of the audience being the commodity, we argue that advertising space (in the case of press media) or advertising time (in the case of television) is the commodity. The price of such advertising space or time is dependent on the projected profile of the readers/viewers attracted to this space/time. Class, gender, generation, race, national differences, and corresponding cultural habits, among other factors, are all major aspects of audiences’ profiles.

In this respect, comparison with the buying or renting of retail space is illuminating. The price or rent of retail space on any city street is determined by its size, location, and the socioeconomic position and cultural status of the inhabitants of the neighborhood where it is located. Likewise, the media lease newspaper pages or television screens to advertisers. The fees they receive are not derived from the value produced by the readers or viewers but from rents paid by the advertisers. As

Caraway (2011, 701) writes, “Speculation on the size and quality of the audience determines the rent charged to the advertiser.”⁸

Social Media and Advertisement Revenues

In the case of social media, CPT/CPM ceases to be an adequate method for measuring advertising prices. While mass media audiences are differentiated between different newspapers or between different television networks, they are homogenized⁹ within the same newspaper or the same television network for a particular program at a particular time. Mass media audiences usually belong to particular social categories, within particular countries, or regions of those countries.¹⁰ Social media, on the other hand, have a global reach. Furthermore, social media specify and segment their audiences according to their interests, their tastes, their networking capacities, their connections to influential network links, and according to affective relations that are created. Therefore, the pricing of advertisements in social media is governed by a more complex regime, which is still emerging. In the following, with the help of Arvidsson and Colleoni (2012) and Gerlitz and Helmond (2011), we briefly describe this regime. Then we show how this regime of pricing also demonstrates that social media users do not produce value and surplus value.

Arvidsson and Colleoni (2012) argue that there is no correspondence between the time that users spend on social media platforms and the time they may spend paying attention to ads. There may have existed a correlation between the duration of attention time and the price of ads for early Internet advertising in the 1990s when the metric for banner ads was simple page views or “hits.” This changed with the multiplication of websites, as the same user would typically browse several webpages, and the number of clicks on an ad on a particular webpage became more important in determining advertising price.

Click-through rates are not the main metric for social media, though, as the click rate is particularly low. Instead, affective relations that emerge through networking are more important in deciding the price of advertising space. For example, Google’s PageRank metric considers both the number of links and their quality (network centrality) to determine influence. Social media are currently pioneering a fourth regime for determining advertising prices that has been called the “like economy” (Gerlitz and Helmond 2011). In this economy the major determinant of price is not the number of links between webpages but rather the direct engagement of users. Such engagement is measured through “social buttons” such as Facebook’s “like” button, Twitter’s “retweet” button, or bookmarking buttons on Digg or

Reddit (Arvidsson and Colleoni 2012). Through social buttons the creation of “webs of affective attachments around informational objects” (144) becomes a more significant factor for determining advertising price than time spent online. Some media scholars (Bermejo 2009; Napoli 2011) describe this as a shift from older “exposure models” that focused primarily on the time audiences spend with media to newer “performance models” of measuring the audience.

To sum up, following Gerlitz and Helmond (2011), Arvidsson and Colleoni identify four regimes of pricing in relation to advertising on the Internet: the “hit,” the “click,” the “link,” and the “like.” Of these four, only with the “hit” does time, they claim, correspond to the value of advertising space. Since the determination of the price of advertising on contemporary social media is dominated by the other three regimes, there is no direct relation between time spent on social media and the price of an ad (Arvidsson and Colleoni 2012).

The lack of any correspondence between the time that users spend on social media and the prices of ads is evidence of the fact that social media users do not produce the exchange value that is embodied in the price of ads. There has to be some correspondence for the labor theory of value to hold true. This is why we argue that social media, like mass media before it, extract rent in exchange for the lease of (virtual) space (see Chen 2003; Caraway 2011).¹¹ As with mass media, the profile of the audience is an important factor for determining the rent, but in social media the profile is individualized and localized. Furthermore, the networking activities of audiences, the intensity of these activities, and the influences and affective relations that they produce also become important factors in determining the rent.

For both mass and social media, the fact that the number and profile of the audience influence the amount of rent creates the illusion that the audience is the source of value. We may call this audience fetishism, a particular manifestation of commodity fetishism. As Richard Maxwell (1991, 31) pointed out in an insightful critique of the audience commodity thesis, “Because the audience carries a price and can be bought and sold for profit, it appears as though money grows out of watching; in this way it assumes the *form* of a commodity” (emphasis added).

MARX’S THEORY OF VALUE AND THE PRICE OF INFORMATION: FUCHS’ SECOND MISTAKE

Nonetheless, there is clearly something more going on when we log on to our social media accounts. From Twitter comments to Facebook “likes,” we leave behind a rapidly expanding trail of digital footprints online.

Indeed, the entire principle that underlies Web 2.0 platforms is the massive provision and storage of personal (ly) (identifiable) data: systematically evaluated, marketed, and used for targeted advertising. The “work of watching” morphs seamlessly into the “work of being watched,” as Andrejevic (2002) astutely described it early on. Given this, it is not surprising that Dallas Smythe and the audience commodity debate should experience something of a revival today.

Christian Fuchs (2010, 2012b) has been at the forefront of this revival. Fuchs argues that social media users produce “informational content” (e.g., status updates, personal data), which is appropriated and sold as commodities by social media. Borrowing from Toffler (1980), he refers to users of social media platforms as “prosumers” (Fuchs 2010, 190). It is thus the unpaid labor of prosumers that creates the exchange value of the informational content that is sold, the magnitude of which is determined by labor time.

As intriguing as we find this idea, we argue instead that informational content¹² produced by prosumers has no exchange value because it can be reproduced digitally and transported electronically at negligible cost and time.¹³ Indeed, such is the case with all information in an era of digital reproduction.

Consider for example a piece of information K and the time spent on its production, tK . If we make M additional digital copies of K , the average time spent on producing a single copy is $(t) = tK/M + 1$. We do not include the time spent on copying this information in the equation because we assume that such time is negligible. With the increase of M , (t) will decrease. For instance, if the original time spent on the production of software is 100 hours and if the software is copied digitally by 99,999 users, the time spent on each copy will be 1/1000 hour, or 3.6 seconds. For 999,999 users, (t) will be 0.36 seconds, and for 9,999,999 users it will be 0.036. Although mathematically 3.6, 0.36, and 0.036 are values, economically they can be considered equal to zero.

The “information commodity” thus differs drastically from physical goods and most services, where, all conditions being equal, the cost and time spent on the reproduction of the commodity are equal to those spent on its production.¹⁴ While the initial creation of information may require huge amounts of labor time, it requires almost no labor-time to be reproduced. As Marx put it, it is the social labor time required to reproduce—not produce—a commodity that determines its value (see Teixeira and Rotta 2012).

Information/knowledge is unique in that it is a universal commons¹⁵: It can exist everywhere simultaneously and it is nonrivalrous (its use does not deplete its use value). This means that data defy the commodity and value forms. Producers of information, whether waged

or unwaged,¹⁶ produce not commodities, but rather universal commons. Since data has no exchange value they must be fenced in¹⁷ and kept artificially scarce in order to justify their price. Thus, a price on data can best be understood as a form of monopoly rent (tribute).

At this point a few important supplementary notes are in order: First, while the information that prosumers produce has no exchange value (and therefore they do not produce surplus value), the services provided by social media companies—such as the extraction of information, and analyzing, structuring, upgrading, storing, customizing, and tailoring it to the needs of particular advertisers—can potentially, but not necessarily, have exchange value. Here, the produced commodity is the service itself not the information. Likewise, teaching is a service that processes and produces information. However, what is sold in a private profit-making school is not information but rather the service of teaching. Obviously, teaching cannot be reproduced at zero cost.

We say that the services social media companies provide can potentially, but not necessarily, have exchange value because most of these tasks are performed automatically by machines. To the extent that labor is involved in the production of these services, this labor produces value and surplus value. But this is not the labor of prosumers but rather that of the employees of social media companies. In the case of Facebook, collecting data, analyzing data, securing the storage of data, connecting to websites, and matching various forms of structured data are the main functions of the company.¹⁸ However, much of the software that enables these services is produced in an open-source manner in which Facebook’s employees cooperate with contributions from outside the company (Thusoo et al. 2010). Although this software has no exchange value, it enables Facebook to produce cheaper services compared to its competitors, and thereby to extract surplus profit.

To sum up, while information/knowledge has no exchange value, the service of processing information/knowledge may have exchange value, and therefore the knowledge workers who perform this labor may produce value and surplus value. However, prosumers do not produce such services.

Now, the following question arises. If information has no exchange value, what happens to the value of the input factors (such as technology and labor power) that went into its production? We argue that these values are not transferred to the product. Also, the costs of storing, maintaining, and transporting information are not transferred to the stored, maintained, or transported information, as such information can be reproduced at almost zero cost.¹⁹ From the point of view of capital, our argument is tantamount to claiming that certain productive factors evaporate into the air. But if considered from the

point of view of use values, they do not disappear but instead become eternally embodied in the universal information commons. Also, while information in the form of applied knowledge (design, software, applied sciences embodied in machines) plays a key role in material/industrial production, it too does not contribute to the exchange value of the commodities that it facilitates, because it has no value in the first place. It is part of the universal commons of general intellect (Marx 1976; 1991; 1993, 704–706). Although the sustained expansion of the general intellect is a condition for the accumulation of both total social capital and individual capital, the general intellect itself has no value.²⁰

That input factors may have high exchange values while the produced information has none is a contradiction that lies at the heart of the capitalist mode of production. According to Marx (1976), exchange value and use value have an antagonistic relation in the capitalist mode of production. The first represents the private interests of the capitalists and the second the collective interests of members of society. With information this contradiction takes its most radical form, as its use by one does not exclude its use by another. With information, use value annihilates exchange value, that is, the capitalist form of production and its abstract value factors. Exchange value can only be imposed on information by means of enclosure,²¹ backed by the state. Hence, the price that the capitalist extracts in exchange for it is a form of tribute.

We can now hypothetically identify four methods through which social media can generate income. The first is through leasing advertisement space to generate advertisement rent. The second is from the sale of information. The third is through the sale of services to advertisers and others, such as the collecting, analyzing, storage, and delivery of data. The fourth is in financial markets through selling shares and through speculation. Of these four, only the third may include the production of surplus value, through the labor of the employees of social media companies. As we have already dealt with the first three mechanisms, we deal with financial operations in the last section of this article.

A CRITIQUE OF ARVIDSSON AND COLLEONI

We now turn to Arvidsson and Colleoni's critique of Fuchs, as presented in their essay "Value in Information Capitalism and on the Internet." We have already credited Arvidsson and Colleoni for their description of the complex and emerging regime of determining advertisement prices in social media. We have also endorsed their critique of Fuchs: that prosumers do not produce value in the Marxian sense since there is no correspondence between attention time and advertising prices. However,

we reject their claim that Marx's theory of value is irrelevant for understanding the political economy of social media. We deal with Arvidsson and Colleoni's arguments in two steps: First we challenge their claim of the relations between "philia," brand, and value. Then we critique their argument that Marx's theory of value cannot explain the importance of financial operations on the so-called market value of social media companies.

Philia, Brand Value, and Advertisement Rent

We agree with much of Arvidsson and Colleoni (2012) and the Arvidsson (2005) description of the sociocultural process of branding and the argument that affective relations play a significant role in branding. However, we reject the thesis that such affective relations create the value of a branded commodity or the brand itself.

Arvidsson and Colleoni (2012, 142) suggest that informational capitalism in general, and social media companies in particular, deploy "an affective "law" of value":

The values of companies and their intangible assets are set not in relation to an objective measurement, like labor time, but in relation to their ability to attract and aggregate various kinds of affective investments, like intersubjective judgments of their overall value or utility in terms of mediated forms of reputation.

In other words, value on social media platforms derives mainly from intangibles—from the affective labor that helps to build relations between a company's stakeholders, consumers, employees, subcontractors, and the public at large. Brands are arguably the most important intangible asset. Elsewhere, Arvidsson (2005, 236) explains that he sees brands as "mechanisms that enable a direct valorization of people's ability to create trust, affect and shared meanings: their ability to create something in common." These positive, affective community bonds are what he refers to as "philia" (Arvidsson, 2009). Following autonomist Marxists like Maurizio Lazaratto, Arvidsson (2005, 241) argues that "surplus value becomes (partially) based on the ability of immaterial labor to produce 'surplus community.'"

What are we to make of this position? The first thing that we need to do here is to distinguish between an advertisement and a brand. An advertisement is a discourse aimed at attaching particular images to a particular product or service. A brand consists of socially recognized and communicated images attached to a product or service. Advertisements present a product in a special guise in order to persuade consumers to buy it. Brands are about product differentiation, which advertising certainly helps with. A brand's credibility can also come from its history, power, influence, and prestige. Therefore, advertising media and owners of brands have

different, though partially overlapping, interests. While ad revenues are pocketed by media owners as a rent that is paid for media space, brand revenues come from the sale of branded commodities, or from franchising the brand, and belong to the owners of these products or services.

An increase in the *philia* for a brand increases the demand for it and thereby increases its prices. The effectiveness of an advertising medium in creating *philia* may also increase the rent of the advertising space in that medium. However, contra Arvidsson, we argue that *philia* does not produce new value but instead helps the owner of the brand to appropriate a larger portion of the surplus value produced by workers in the realm of production.²² This takes three forms. First, *philia* helps the owner of the brand sell his or her commodity above its value, and thus to earn extra profits. Second, it allows the owner to extract monopoly rent through copyright and patent regimes by franchising the brand. We explain these two mechanisms in what follows. The third source of a brand's revenue is derived from the profit of fictitious capital and speculation in the stock market. We briefly discuss this in the following as a prelude to a more in-depth discussion of fictitious capital, the stock exchange, and speculation. In doing so, we hope to demonstrate the error of Arvidsson and Colleoni's understanding of financial operations.

Surplus Profit of the Brand

In the capitalist market, commodities are not necessarily sold for prices equal to their values. Depending on the interplay between supply and demand, commodities are sold at prices either above, below, or equal to their values. Those capitalists who manage to sell their commodities at prices above their value make profits above the surplus value incorporated in their commodities. By contrast, those who sell their commodities below their values but above the production cost make profits that are smaller than the surplus values incorporated in their commodities. Those who sell at or below production cost do not make profit and are doomed to bankruptcy. As the buying power of any given society at any given time is limited, consumer preference for some commodities decreases the effective demand for other commodities.²³ In this way the differences between the values and prices of the commodities that are sold for prices below their values are transferred to the prices of those commodities that are sold for prices above their values.

As a result, the sellers of the commodities with higher demand make surplus profits at the expense of the sellers of commodities with lower demand. Branding plays a central role in such a transfer of value by enhancing the

effective demand for branded commodities. Arvidsson and Colleoni thus confuse the transfer of value with the production of value. We thus argue that Arvidsson and Colleoni take the fetishism of the brand at face value. Those who sell their commodities for prices higher than their value may recover part or the whole cost of advertisements from the additional profit they make. However, this does not mean that the initial advertisement costs contributed to the value of these commodities, or to the extra profits that are earned by the brand. In short, brands may help shift demand from one commodity to another and allow the company that produces the branded commodity to charge a higher price for the commodity, but a brand does not increase the value of a commodity.

Brands and Monopoly Rents

A brand can also generate monopoly rent in two ways. First, to the extent that a particular brand is exclusive and cannot be substituted by similar brands, the seller of the commodity can extract a monopoly rent on top of the surplus profit. Although analytically the surplus profit and monopoly rent earned through the brand are two different categories, in practice they are aggregated in the total profit of the seller. Second, the owner of a brand may forgo producing the brand and instead extract a monopoly rent by franchising the brand to those who are willing to produce the branded commodity. In this way monopoly rent is extracted through intellectual property. Brand as intellectual property is thus a major source of monopoly rent (see also Harvey 2012).

Brands and Earnings Through Speculation

Brands become an important object of speculation in the stock exchange (Arvidsson, 2006). However, financial speculation and the institution of the stock exchange certainly predate the contemporary significance of branding. The stock exchange grew out of the requirement for the large-scale production of surplus value, and the production of surplus value continues to be the principle reason for the very existence of the stock exchange. It is to this topic that we now turn.

Fictitious Capital, the Stock Exchange, and Speculation

Arvidsson and Colleoni, in their critique of Fuchs, declare that the creation of value on social media is primarily generated through two mechanisms. We have already dealt with the first mechanism, which, following Arvidsson (2009), we have called "*philia*." We have shown how *philia* does not actually produce value but

instead transfers value that is produced by labor. It is now time to deal with the second mechanism that Arvidsson and Colleoni argue is responsible for value creation on social media—financial operations. Arvidsson and Colleoni claim that financial operations are the main source of value on social network platforms such as Facebook. What is more, they argue that this fact proves the irrelevance of Marx's theory of value for explaining the political economy of social media.

We agree that financialization is central to understanding the political economy of social media. Social media platforms, in particular Facebook, have very high price-to-earnings (PE) ratios.²⁴ However, in what follows we instead show that Marx's theory of value is essential for understanding the centrality of these financial operations.

Fictitious Capital

The emergence and consolidation of banks as the specific institutions of money-capital, and their hegemony over the rest of the economy, have capitalized all streams of income. $M-C-M'$ becomes simply $M-M'$: Money creates more money. Any revenue is considered as interest on interest bearing capital, with capitalized price determined by the magnitude of the revenue divided by the interest rate (capitalized price = revenue \div interest rate).²⁵ This revenue can be profit, rent, interest, tribute, tax, and so on. For example, the capitalized price of a revenue of USD1 million at 2% interest rate is $1,000,000 \div 0.02 = \text{USD}50,000,000$. Marx calls this fictitious capital because this is not real capital invested in the process of the production of surplus value; it is hypothetical capital that is imagined on the basis of the assumption that any revenue is interest on capital. Fictitious capital is a central aspect of the stock exchange (Hilferding, [1910] 1981).

Although the main purpose of the joint-stock company (a business owned by its shareholders) is productive investment in the direct extraction of surplus value, companies like Facebook, which do not produce surplus value but extract rent, can also issue shares. Shares are entitlements to dividends that originate from the income of joint stock companies: income generated outside the stock exchange. The advantage of the stock exchange from the point of view of shareholders is that they can recover their money by selling their shares at any time.

So we have two different parallel economic operations, separated from each other spatially, temporally, and economically, one in the stock exchange, the other in the joint-stock company. However, these two processes are related. As dividends come from company revenues and these revenues are ultimately portions of the total social surplus value produced by workers, shares are entitlements to these portions of the total surplus

value. Therefore, the production of surplus value outside the stock exchange is the economic foundation of the stock exchange (Hilferding [1910] 1981).

Selling one's shares in the stock exchange for a price above their purchase price can also generate a profit. This profit, which is the profit of fictitious capital, does not originate from surplus value and belongs to a different category from dividends. However the price of the shares, and as a result the profit of the fictitious capital, depends on the size of dividends. The higher the real or the projected dividends of a company, the higher is the price of its shares, and as result the higher is the profit of its fictitious capital. The size of dividend per share ultimately relies on the rate of profit, which has a positive correlation with the rate of surplus value, which is the rate of exploitation.²⁶

Speculation and Speculative Windfalls

Shares are bought and sold on a daily basis in the stock exchange for speculative reasons.

Speculation is a special function of the stock exchange. Speculative windfalls, however, do not result from an increase in a company's profit or rent but rather from fluctuations in their amounts. Speculations about changes in the direction and rate of the amount of profit or rent result in fluctuations in share prices. Share prices depend on the rate of interest on the one hand, and the amount of dividends on the other. The rate of interest is, in a given time period, fixed by the government, unless sudden unexpected dramatic external events such as war, revolution, or natural disaster drain the money supply.²⁷

Speculating on the direction of change in the amount and rate of the dividends, speculators try to buy shares cheap and sell them dear. Aside from fluctuations in the amount of generated income, the interplay between supply and demand within the stock exchange influences the prices of shares. Actually, speculation itself, combined with the fluctuating moods and expectations of speculators, creates continuous ebbs and flows in supply and demand. The resultant change in price instigates a new wave of speculation, resulting in new changes in supply and demand and thereby prices (Hilferding [1910] 1981).

MARX'S THEORY OF VALUE AND INCOMES FROM FINANCIAL OPERATIONS

To sum up, the stock exchange operates in relation to the joint-stock company that produces value and surplus value, or (as with social media companies) receives rent from other companies that produce value and surplus value. The amount of fictitious capital behind a particular company in the stock exchange depends on its

profitability or ability to extract rent outside the stock exchange, which in turn relies on the extraction of surplus value from workers. This is most evident in times of bankruptcy and crisis when a dramatic fall in the rate of industrial profit causes a dramatic depreciation in share prices. The collapse of profit causes a decrease in the amount of rent as well. In short, without the production of value the smoke of the stock exchange will vanish immediately.

In the stock exchange, capitalist property, taking the form of titles to revenue, appears to be independent of the production of value and surplus value in the process of production. Such property, disconnected from use value, acquires the homogeneous form of lending capital. Its value appears to be determined by its yield. Therefore, the relation between the property and its yield is a purely quantitative relation. It appears that money, through some magical force, gives birth to more money. Arvidsson and Colleoni, taking this mystified form at face value and deceived by the self-referentiality of fictitious capital, denounce—mistakenly—the relevance of Marx's theory of value for understanding the workings of financial capital.

CONCLUSION

We have argued that a more careful understanding of the relation between rent and surplus value is essential for grasping the political economy of social media. Marx's theory of rent is not separable from his theory of value and indeed must be understood as an essential component of his general theory of capital. Rent is a portion of the surplus value that is produced by wage-laborers and independent workers. As the Marxist economist Isaak Illich Rubin (1972, 46n1) wrote, even though the category of rent does not "directly express relations between commodity producers through the products of their labor, it is nevertheless related to these relations and can be explained in terms of them. In other words, the theory of rent is derived from the theory of value."

The strength and brilliance of Marx's analysis of capitalism is his insistence on relating the parts with the whole(s). Using this method he showed that profit, interest, and rent are the forms of surplus value in the realms of exchange and distribution and therefore constituted portions of the total social surplus value produced by the total social labor in the realm of production (Marx 1981).

In conclusion, the "work" of watching ads does not produce surplus value. Advertisers do not buy "audience power," as Fuchs would have it, but instead rent access to potential future consumers. Prosumers also do not produce surplus value through the information-work that they engage in, because, as discussed earlier, information

in an era of digital reproduction has an exchange value bordering on zero.

For the information capitalist, enclosure is a means of extracting extra surplus value (in the case of trade secrets) or monopoly rent (through intellectual property). Both extra surplus value and monopoly rent represent value that is produced by workers outside the sphere of information production. Those who argue that social media users produce surplus value effectively deny the fact that it is primarily labor that is exchanged outside the media with capital that produces the rents for media and hence is exploited by media capitalists. The claim of users to a share of this rent under the pretext that they produce it is a demand to partner with media capitalists in exploiting the working class.

That said, the fact that information has no exchange value does not imply that those who produce information or knowledge, including "prosumers," cannot be exploited. The form that the exploitation of information-knowledge producers takes is the expropriation of the universal commons of information by capital, whether through trade secrets or through intellectual property. The enclosure of information-knowledge is not only the exploitation of direct producers of information-knowledge but also of humanity at large. This is because new information-knowledge is produced through processing existing information-knowledge, which is part of the general intellect—the product of the collective intellect of humanity at large. In this way the rentier capitalist is involved in a twofold form of exploitation, forms that mutually condition each other. The rentier capitalist expropriates the use value of the commons of knowledge from those who produce it and from the rest of humanity and then uses this enclosure to extract value from value-producing waged and unwaged labor. As argued elsewhere (Rigi n.d.), this twofold exploitation is the defining characteristic of contemporary information capitalism.

Workers who produce information-knowledge, whether waged or unwaged (prosumers are just one instance of unwaged knowledge producers), and producers of surplus value occupy two different positions in relation to capital. This difference creates a certain contradiction between the two strata that can be economically and politically exploited by capital. The knowledge worker has simultaneously a more radical and a less radical position vis-à-vis capital in comparison to the producer of surplus value. He or she has a more radical position because he or she produces commons that exceed the capitalist mode of production. He or she has a less radical position because under the capitalist system, his or her wages are derived from a portion of the surplus value produced elsewhere. Indeed, capitalists bribe elite knowledge workers by sharing with them the rents and tributes they extract from producers of surplus value.

Producers of surplus value, on the other hand, confront capital from a position within the capitalist mode of production. They bargain for a larger portion of the value they produce, usually without questioning the system itself. In this sense, they are less radical than knowledge workers. However, they can also question the capitalist mode of production by claiming the whole working day for themselves (society). This would only be possible through the transformation of capitalism into a new mode of production. Indeed, commons-based peer production, established by a segment of knowledge workers, offers a model for this new mode of production (Rigi 2013).

One of the strengths of Fuchs's argument is that he emphasizes the role of prosumers and their inherent contradiction with capitalism—a capitalism that he rightly emphasizes is still based on the law of value. However, he mistakenly considers prosumers to be producers of surplus value when it would be more accurate to see them as productive of a commons that is used to extract rent from advertisers.

Arvidsson and Colleoni are right in claiming that we now have new social forms that Marx's theory of value did not anticipate and cannot explain. But these forms are not monetized forms of value such as revenues from advertisements and brands, rent, yields from fictitious capital, or revenues earned from financial speculation. All these phenomena and anything that has to do with money is within the reach of Marx's theory of value and can be adequately explained by it, even so-called fictitious commodities that have prices but do not include value in the Marxian sense.

What really goes beyond Marx's theory of value, and by the same token beyond capitalism, is the peer production of a universal commons of knowledge by knowledge workers, including prosumers. Indeed, a subsection of such workers has established commons-based peer production that negates the law of value altogether, even if it remains under the law's sway (Bauwens 2009; Meretz 2012; Rigi 2013). This is not a cause for despair among Marxists. Indeed, Marx would be the first to celebrate it. Peer production is identical with what he described as advanced communism. After all, he spent much of his life on a political project that aimed at abolishing the law of value. Marx's theory of value thus has a clear understanding of the historical limits of its validity.

NOTES

1. The same revenue is counted by Jhally and Livant once as rent and then again as surplus value/profit. Profit is a yield from the investment of capital and rent is revenue earned through exchanging the use value of a monopoly-owned asset for money. Revenues that the networks receive from advertisers

either is rent, which is part of the surplus value produced outside the television networks, or is value produced by the watching labor of the audience. It cannot simultaneously be both.

2. Here we give an account of Marx's theory of value and surplus value within the capitalist mode of production. Therefore, like him, we abstract from other forms of labor and only consider the wage labor that produces commodities. We think that methodologically this is a legitimate move. We recognize that various forms of unwaged labor, such as slave labor or indentured labor, that produce commodities can also be the origin of value and surplus value. The most prevalent form of such labor is the unwaged labor of small holders, whether peasants or small entrepreneurs, who do not exploit wage labor. Capitalists extract surplus value from them through the mechanisms of unequal exchange (Mandel [1972] 1978, chapter 3). We return to this point later when we discuss the origin of the rents paid to media companies.
3. If I buy a piece of fabric and pay a tailor to make a coat for me, although the tailor performs wage labor and produces use value, (s)he does not produce a commodity, and thus does not produce surplus value because the coat is not put on the market (Marx 1969).
4. Fuchs (2012) in his rejoinder to Arvidsson and Colleoni is correct to claim, as we show in due course, that Arvidsson and Colleoni confuse value and price. However, Fuchs uses Marx's distinction between value and price to claim that only a small portion of the value produced by prosumers is transformed into prices and the rest is wasted. This is a mistaken argument. While something with no exchange value can have a price, something without a price has no exchange value, even if it is the product of labor. Price is a condition for the existence of exchange value. Products of labor that are not sold on the market have no exchange value because they are not commodities. Marx is explicit in this respect. The "price of a commodity constantly stands above or below the value of the commodity, and the value of the commodity itself exists only in this up-and-down movement of commodity prices" (Marx 1857–1858 quoted in Fuchs 2012, 634, emphasis added). Why does Marx explicitly say this? It goes back to the determination of value. Value is congealed labor, but it is congealed social labor, not individual labor. Individual labor can only become part of the total social labor through exchange and to the extent that its products are sold. In other words individual labor is not immediately social; it can only become social through the mediation of exchange (see Marx 1976). Marx explains this as follows. Capitalist society as a whole divides its total abstract labor among different branches according to its total need for various goods and services. However, this distribution of social labor does not take place through a plan but through mechanisms of exchange, supply, and demand. The goods and services that are not sold are not demanded by society; therefore, from the point of view of society they are wasted, and the labor spent on them is wasted too (the labor does not become part of the total social labor). Therefore, value cannot exist without price. Hence, Fuchs's argument that prosumers produce value that is not transferred into price is mistaken. If this were true then the total sum of value could be much higher than the total sum of prices. This contradicts Marx's famous

thesis that these two sums are equal (see the later section on the critique of philia).

5. CPT or CPM is a measure of the cost of advertising for the advertiser. It is a measure for advertising prices. It is not a measure of the production cost of advertisements for media. If ad prices represented value, value produced by audience, then CPT would represent $c + v + s$, or more precisely, $c + v + p$ (constant capital + variable capital + profit). Thus, CPT, or CPM, is a good approximate empirical measure to test whether audiences produce exchange value. We say approximate because value has no independent empirical existence and can only be expressed empirically through price. Thus, we can approximately compare values through comparing corresponding prices, in this case CPTs.
6. This point requires a qualifying note. The workers who produce and publish an ad may create value and surplus value in the classical Marxian sense. Although a small portion of an ad's price may consist of such value, its overwhelming portion derives from rent.
7. Smythe is correct if we understand him to be saying that learning what to buy accelerates the realization of the value of advertised commodities. In other words, by reading/watching ads, audiences cut the circulation time of commodities and in this way help the annual surplus value to grow. In this way we could say that the audience performs free labor. However, this labor does not directly produce a commodity or value. Whether we call the audience's activities "labor" or something else, such activity does not produce exchange value. Advertising's effect of increasing demand only transfers value from commodities in low demand to those in high demand. We address this in critiquing Arvidsson and Colleoni later on.
8. Market relations between media, advertisers, and ratings companies as well, fundamentally influence advertising prices (Meehan 1984; 1993). This may help explain in part why average CPTs in certain Latin American countries are higher than those in North America, as extreme media concentration in these countries would allow media there to extract higher advertising rents.
9. We do not mean that actual readers of a particular newspaper or viewers of a particular program are homogeneous, just that they are assumed to be homogeneous in CPT calculations.
10. Newspapers with a global reach such as the *Wall Street Journal* and networks such as CNN are exceptions.
11. We must emphasize though that the origin of this rent is surplus value, which is produced outside the rented media space. Advertisers give away part of the revenues (metamorphosed surplus value) they have acquired in different forms (profit, interest, rent, tribute, taxes, etc.). Here, as with land, ownership over space is the means of transforming surplus value into rent.
12. Information is defined here as cognitive or perceptual forms that are expressed in signs and symbols. Examples on social media include status updates and feedback that are collected as personal data along with registration information.
13. One reviewer of this article wondered whether paying social media users for their provision of personal data changes the determination of whether "presumption" counts as labor that is productive of value. This is an interesting question. There are a number of startups that are experimenting with monetarily rewarding people for their data (see, e.g., Money For My Data, <http://www.moneyformydata.com>). However, such payments would have to be extremely low, in large part because "raw data" are easily obtained from numerous sources nowadays and are duplicable at little cost. Thus, it has an exchange value bordering on zero. (see Steel, Locke, Cadman, and Freese 2013).
14. For most material goods an increase in the volume of production decreases the cost of fixed capital per unit of the commodity. The reduction of fixed capital occurs piecemeal (the greater the number of units of commodities the less the share of fixed capital in each unit). However, the cost of labor and raw materials, other conditions being equal, does not decrease with an increase in the volume of production. Therefore, the value of such commodities never tends toward zero, as its lower limit is the cost of raw materials plus the value the labor adds to this cost. However, the digital reproduction of information follows a different rule. The cost of the first digital copy is already approaching zero.
15. Universal commons are commons that can be used simultaneously everywhere and are not subjected to wear and tear. Bounded commons, like a forest or a lake, cannot be simultaneously everywhere and are subjected to wear and tear. Universal commons have no time and space boundaries. Bounded commons have both spatial and temporal boundaries.
16. Although the difference between waged and unwaged knowledge worker does influence their common capacity to produce universal commons, we are setting aside this difference for the moment.
17. By "fenced in" we mean measures that prevent the free flow of data/information and its free use by everyone. There are three major mechanism of fencing: trade secrets, intellectual property, and censorship. The mechanism most relevant to our discussion is intellectual property.
18. It is important to remember that the data-related service economy is not limited to social media companies. One of the authors conducted research at the Budapest branch of multinational company that provides data-related services to a number of major banks and insurance and pharmaceutical companies with a global reach. Indeed, the company does not sell data/information to its client companies. By contrast, it receives the data for free from its clients. It then charges the clients for analyzing, structuring, and securely storing the structured data and giving the clients secure access to the stored data. A key specialist in the company told the author that most database companies make their profits not through selling information but rather by providing data-related services. Naturally, these services may have exchange value, though not necessarily.
19. We can reach the same conclusion by another route. Of course the telecommunications industry has costs but if we divide the total expenses of this industry by the volume of data that is globally transported in a given period, the cost of the transportation of a gigabyte of data will be almost negligible. Telecommunication companies extract monopoly rents far above the real costs.
20. It could be asked: If information has no exchange value, what then motivates public and private investment in science and

technology? Public investment in science and technology is usually not motivated by profit. It is usually intended for two purposes. First is to contribute to the expansion of the existing general intellect that is available for free to the public, including capitalists. A second purpose is for military purposes. In both cases knowledge is not commoditized. In the first, it is a universal commons and in the second a military secret. It goes without saying that the production of general intellect by public institutions at cost to taxpayers serves also the interests of capitalists, because general intellect is a requirement for the accumulation of capital, though it has no value. A qualifying note is in order here. Although public research institutions may bring their discoveries under intellectual property to extract rent, as we discuss in the following in the case of private investment in science and technology these rents are a portion of the surplus value that is produced outside the investing institutions.

Private investment in science and technology is indeed motivated by making profits. The produced knowledge is typically used for the manufacturing of goods or services that are sold as commodities. The knowledge itself is kept as a trade secret and has no value but it can help the manufacturer to extract extra surplus value from outside the manufacturing enterprise, though the commodities that the enterprise itself produces may also have value and include surplus value. This occurs in two major ways. In the first, the secret knowledge enhances the productivity of the enterprise enabling it to produce its commodity more cheaply and then sell it above its value, extracting an extra surplus value from its competitors (Marx 1976, 434–436). In the second, the knowledge consists of the design for a new product or for the modification of an existing one, enabling the enterprise to produce it alone and extract extra profit by setting a high monopoly price. In both cases the investor can extract extra surplus value from outside the enterprise as long as knowledge is kept secret. If the knowledge enters the public domain, or if competitors discover this knowledge, the investor privilege of extracting extra surplus value will end.

21. Although enclosure can be a source of primitive accumulation, the two are not always identical. The enclosure of information creates new possibilities for the extraction of rent which is a normal aspect of capital accumulation, not primitive accumulation (Marx 1991).
22. Refer back to our earlier discussion of the difference between value and price.
23. Of course, interest rates and the availability of credit influence consumer demand as well.
24. Facebook, at the time of writing, has a price-to-earnings ratio of 121.23 (http://ycharts.com/companies/FB/pe_ratio, accessed November 17, 2013).
25. For example, if you lease your apartment for \$10,000 per year and the interest rate is 5% then the value of your apartment as interest-bearing capital is 10,000 divided by 5%, which is \$200,000.
26. Rate of profit is rate of exploitation divided by (organic composition + 1). Organic composition is constant capital divided by variable capital. Therefore, the rate of profit always has a positive correlation with the rate of exploitation. Although a

change in the rate of profit might be only due to a change in organic composition, we could say that the rate of profit reflects that of the rate of exploitation. This is particularly so for the general average rate of profit, which is calculated on basis of the average social organic composition of capital for a given period (Marx 1991).

27. Although state monetary policies in fixing interest rates are also an important factor for financial operations and influence the workings of the law of value, in the long run these policies are conditioned upon the law of value, namely, the concrete conjecture of the economic cycle (growth, stagnation, crisis). Crises such as the liquidity crisis for banks in 2008–2009 may also be related to cash flow and the availability of credit. In periods of growth the exchange rate is relatively low and stable, which are good conditions for fictitious capital.

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